

## **NON-AFFINITY BASED ISOTOPE TAGGED PEPTIDES AND METHODS FOR USING THE SAME**

### **Abstract**

The invention provides non-affinity based isotope tagged peptides, chemistries for making these peptides, and methods for using these peptides. In one aspect, tags comprise a reactive site (RS) for reacting with a molecule on a protein to form a stable association with the peptide (e.g., a covalent bond) and an anchoring site (AS) group for reversibly or removably anchoring the tag to a solid phase such as a resin support. Anchoring may be direct or indirect (e.g., through a linker molecule). Preferably, the tag comprises a mass-altering label, such as a stable isotope, such that association of the tag with the peptide can be monitored by mass spectrometry. The reagents can be used for rapid and quantitative analysis of proteins or protein function in mixtures of proteins.